

BS7870-4.10 11kV Stranded and Solid Aluminium Conductors

BS7870 - 4.10

CABLE CHARACTERISTICS



Bending radius
 $r=20D$



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CABLE DESCRIPTION

1.CONDUCTOR

Solid circular conductor complying with BS6360 Class 1 or compacted circular aluminium conductor complying with BS6360 Class 2.

2. CONDUCTOR SCREEN

Extruded semi-conducting compound bonded to the insulation and applied in the same way as the insulation.

3.INSULATION

Extruded cross-linked polyethylene (XLPE) suitable for operation at a conductor temperature at 90°C.

4.INSULATION SCREEN

Extruded semi-conducting compound applied in the same operation as the insulation. Cold strippable screens are supplied as standard but fully bonded screens may be provided if specified.

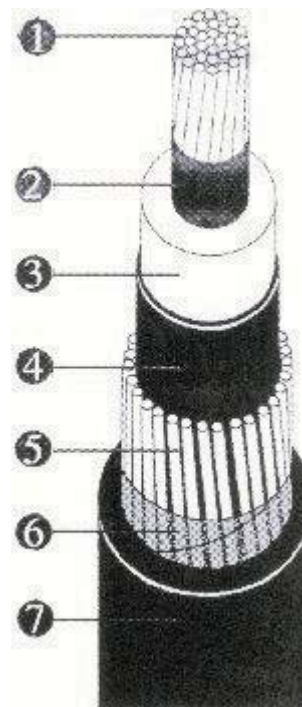
5.METALLIC SCREEN

Circular copper wires applied helically to provide an earth fault current path. Nominal screen area, as stated in table, supplied as standard unless otherwise specified.

6.BINDER TAPE

7.OVERSHEATH

Extruded red medium density polythylene (MDPE) is supplied as standard.



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Constructional Data

Nominal cross-sectional area	Minimum average thickness of insulation	Nominal diameter over insulation	Nominal area of copper wire screen	Minimum average thickness of oversheath	Nominal overall diameter of cable	Nominal drum length
mm ²	mm	mm	mm ²	mm	mm	m
70	3.4	18.8	35	1.7	26.1	1000
95	3.4	20.5	35	1.8	28	1000
150	3.4	23.3	35	1.9	30.9	500
185	3.4	25.1	35	1.9	32.5	500
240	3.4	27.3	35	2	34.9	500
300	3.4	29.6	35	2.1	37.2	500

Installation Data

Nominal cross-sectional area	Approx cable weight	Minimum bending radius	Nominal internal diameter of duct
mm ²	Kg/m	mm	mm
70	0.8	550	100
95	0.9	600	100
150	1.2	650	100
185	1.3	650	100
240	1.7	700	100
300	1.9	750	100

Electrical Data

Nominal cross-sectional area	Maximum DC resistance of conductor at 20°C	Maximum AC resistance of conductor at 90°C	Maximum capacitance	Reactance at 50Hz	Impedance at 50Hz	Maximum charging current at normal voltage and frequency
mm ²	μ Ω/m	μ Ω/m	pF/m	μ Ω/m	μ Ω/m	mA/m
70	443	568	288	121	581	0.58
95	320	410	323	114	426	0.65
150	206	265	380	107	286	0.76
185	164	211	416	104	234	0.83
240	125	161	460	100	190	0.92
300	100	130	506	96.9	162	1.01

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Ratings

Nominal cross-sectional area mm ²	Current Ratings			Short Circuit Ratings	
	Laid direct in ground	Drawn into ducts	Laid in air	1 second short circuit rating of conductor kA	1 second short circuit rating of copper wire screen kA
70	210	215	240	6.3	6.1
95	250	255	300	8.5	6.1
150	320	315	380	13.5	6.1
185	360	350	435	17.0	6.1
240	415	405	510	22.3	6.1
300	475	455	600	28.0	6.1

Current rating conditions:

Ground temperature 15°C
 Ambient temperature (air) 25°C
 Depth of burial 0.8m
 Thermal resistance of soil 1.2°C m/W

Single core cables in trefoil, bonded and earthed at both ends.



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